

We claim:

1. An apparatus comprising:
 - a flexible active display; and
 - a flexible audio transducer proximally disposed with respect to the flexible active display.
2. The apparatus of claim 1 and further comprising a flexible substrate that supports both the flexible active display and the flexible audio transducer.
3. The apparatus of claim 1 and further comprising at least a second flexible audio transducer proximally disposed with respect to the flexible active display.
4. The apparatus of claim 3 and further comprising a flexible substrate that supports the flexible active display, the flexible audio transducer, and the at least a second flexible audio transducer.
5. The apparatus of claim 1 and further comprising a plurality of flexible audio transducers disposed substantially equidistant from one another about the flexible active display.
6. The apparatus of claim 1 and further comprising:
 - a first flexible substrate that supports the flexible active display;
 - a second flexible substrate that supports the flexible audio transducer.
7. The apparatus of claim 6 and further comprising an acoustic dampener operably coupled between the first flexible substrate and the second flexible substrate.
8. The apparatus of claim 7 wherein the acoustic dampener includes a vacuum disposed therein.
9. The apparatus of claim 7 wherein the acoustic dampener comprises a discontinuous material.
10. The apparatus of claim 9 wherein the discontinuous material comprises a woven structure.

11. The apparatus of claim 9 wherein the discontinuous material includes a plurality of holes disposed through the material.

12. The apparatus of claim 6 wherein the first and second flexible substrate are comprised of a similar material.

13. The apparatus of claim 6 wherein the first and second flexible substrate are comprised of differing materials.

14. The apparatus of claim 1 wherein the flexible audio transducer is comprised of at least one layer of a dielectric elastomer polymer material.

15. The apparatus of claim 14 wherein the at least one layer of a dielectric elastomer polymer material has a compliant electrode material disposed on at least one side thereof.

16. The apparatus of claim 15 wherein the at least one layer of a dielectric elastomer polymer material has a compliant electrode material disposed on both of opposing sides thereof.

17. The apparatus of claim 1 and further comprising a selective rigidizer disposed proximal to the flexible audio transducer.

18. The apparatus of claim 1 and further comprising a rigid backing disposed at least partially coextensively with the flexible audio transducer.

19. The apparatus of claim 1 and further comprising a housing and a retraction mechanism disposed therein that is operably coupled to the flexible active display and the flexible audio transducer.

20. A method of forming a flexible combined display and speaker apparatus, comprising:

- providing a flexible substrate;
- providing a flexible active display in association with the flexible substrate;
- providing a flexible speaker in association with the flexible substrate.

21. The method of claim 20 and further comprising:

- temporarily disposing the flexible substrate, and hence the flexible active display and the flexible speaker, in a non-planar configuration.

22. The method of claim 21 wherein temporarily disposing the flexible substrate, and hence the flexible active display and the flexible speaker, in a non-planar configuration comprises rolling the flexible substrate, and hence the flexible active display and the flexible speaker, into a substantially cylindrical shape.

23. The method of claim 22 and further comprising:

- retractably disposing at least a portion of the substantially cylindrical shape into a housing.

24. The method of claim 21 wherein temporarily disposing the flexible substrate, and hence the flexible active display and the flexible speaker, in a non-planar configuration comprises folding the flexible substrate.

25. An integrated display and speaker comprising:

- flexible display means for selectively providing an active display on a conformably flexible display surface;
- flexible speaker means integrally configured with respect to the flexible display means for selectively providing audible sound.

26. The integrated display and speaker of claim 25 wherein the flexible speaker means comprises a dielectric elastomer polymer.

27. The integrated display and speaker of claim 26 wherein the dielectric elastomer polymer has a compliant electrode material disposed on at least one side thereof.

28. The integrated display and speaker of claim 27 wherein the dielectric elastomer polymer has a compliant electrode material disposed on at least two opposing sides thereof.

29. The integrated display and speaker of claim 28

wherein the compliant electrode material on both sides of the dielectric elastomer polymer comprises a substantially identical material.